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## 1 Routine/Function Prologues

### 1.0.1 clm2\_singlegather.F90 (Source File: clm2\_singlegather.F90)

Gather single variable for output

REVISION HISTORY:

Apr 2003 ; Sujay Kumar, Initial Code

INTERFACE:

```
subroutine clm2_singlegather(index, var)
```

USES:

```
use lisdrv_module, only : lis
use clm_varcon, ONLY : istwet,denh2o
use clm_varpar, ONLY : nlevsoi
use clm_varder
use tile_spmdMod
use clm2pardef_module
```

CONTENTS:

```
if(index ==1) then
    var_temp = clm%totfsa/float(clm%count)
elseif (index ==2) then
    var_temp = -1.0*clm%toteflx_lwrad_net/float(clm%count)
elseif(index == 3) then
    var_temp = clm%toteflx_lh_tot/float(clm%count)
elseif(index ==4) then
    var_temp = clm%toteflx_sh_tot/float(clm%count)
elseif(index ==5) then
    var_temp = clm%toteflx_soil_grnd/float(clm%count)
elseif(index ==6) then
    var_temp = clm%totsnow/float(clm%count)
elseif(index ==7) then
    var_temp = clm%totrain/float(clm%count)
elseif(index ==8) then
    var_temp = clm%totqflx_evap/float(clm%count)
elseif(index ==9) then
    var_temp = clm%totqflx_surf/float(clm%count)
elseif (index ==10) then
    var_temp = clm%totqflx_drain/float(clm%count)
elseif (index ==11) then
    var_temp = clm%totqflx_snomelt/float(clm%count)
elseif (index ==14) then !SnowT
    do t=1,di_array(iam)
        snowtemp(t)=0.
        if (clm(t)%itypwat/=istwet)then
```

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        if(clm(t)%snl < 0)then
            totaldepth(t)=0.
            do i=clm(t)%snl+1,0      ! Compute total depth of snow layers
                totaldepth(t)=totaldepth(t)+clm(t)%dz(i)
            enddo
            do i=clm(t)%snl+1,0      ! Compute snow temperature
                snowtemp(t)=snowtemp(t)+(clm(t)%t_soisno(i)*clm(t)%dz(i))
            enddo
            snowtemp(t)=snowtemp(t)/totaldepth(t)
        endif
        if(snowtemp(t).eq.0)snowtemp(t)=lis%d%udef
    endif
enddo
var_temp = snowtemp
elseif (index ==15) then !VegT
    var_temp = clm%t_veg
elseif(index ==16) then !BareSoilT
    var_temp = clm%t_grnd
elseif (index ==17) then !AvgSurfT
    do t=1,di_array(iam)
        snowt(t) = 0.0
        if(clm(t)%itypwat /=istwet) then
            if(clm(t)%snl <0) then
                snowt(t) = clm(t)%t_soisno(clm(t)%snl+1)
            endif
        endif
        if(snowt(t)==0.0) snowt(t) = lis%d%udef
    if(snowt(t).ne.lis%d%udef)then
        asurft(t)=clm(t)%frac_sno*snowt(t)+ &
                    clm(t)%frac_veg_nosno*clm(t)%t_veg+  &
                    (1-(clm(t)%frac_sno+clm(t)%frac_veg_nosno))* &
                    clm(t)%t_grnd
    else
        asurft(t)=clm(t)%frac_veg_nosno*clm(t)%t_veg+  &
                    (1-clm(t)%frac_veg_nosno)*clm(t)%t_grnd
    endif
enddo
var_temp = asurft
elseif (index ==18) then !AvgSurfT
    var_temp = clm%t_rad
elseif(index ==19) then !Albedo
    var_temp = clm%surfalb
elseif(index ==20) then !SWE
    var_temp = clm%h2osno
elseif(index ==21) then !SoilMoist1
    var_temp = clm%h2osoii_liq(1)+clm%h2osoii_ice(1)
elseif(index ==22) then !SoilMoist2

```

```

    var_temp = clm%h2osoi_liq(2)+clm%h2osoi_ice(2)
elseif(index ==23) then !SoilMoist3
    var_temp = clm%h2osoi_liq(3)+clm%h2osoi_ice(3)
elseif(index ==24) then !SoilMoist4
    var_temp = clm%h2osoi_liq(4)+clm%h2osoi_ice(4)
elseif(index ==25) then !SoilMoist5
    var_temp = clm%h2osoi_liq(5)+clm%h2osoi_ice(5)
elseif(index ==26) then !SoilMoist6
    var_temp = clm%h2osoi_liq(6)+clm%h2osoi_ice(6)
elseif(index ==27) then !SoilMoist7
    var_temp = clm%h2osoi_liq(7)+clm%h2osoi_ice(7)
elseif(index ==28) then !SoilMoist8
    var_temp = clm%h2osoi_liq(8)+clm%h2osoi_ice(8)
elseif(index ==29) then !SoilMoist9
    var_temp = clm%h2osoi_liq(9)+clm%h2osoi_ice(9)
elseif(index ==30) then !SoilMoist10
    var_temp = clm%h2osoi_liq(10)+clm%h2osoi_ice(10)
elseif(index==31) then !Soilwet
    do t=1,di_array(iam)
        swetint(t) = 0.0
        avgwatsat(t) = 0.0
        totaldepth(t) = 0.0
        do m=1,nlevsoi
            avgwatsat(t)=avgwatsat(t)+clm(t)%dz(m)*clm(t)%watsat(m)
            totaldepth(t)=totaldepth(t)+clm(t)%dz(m)
            swetint(t)=swetint(t)+clm(t)%h2osoi_liq(m)
        enddo
        avgwatsat(t) = avgwatsat(t)/totaldepth(t)
        swetint(t) = (swetint(t)/denh2o)/totaldepth(t)
        var_temp(t) = 100*swetint(t)/avgwatsat(t)
    enddo
elseif(index==32) then !TVeg
    var_temp = clm%totqflx_tran_veg/float(clm%count)
elseif(index==33) then !ESoil
    var_temp = clm%totqflx_evap_grnd/float(clm%count)
elseif(index==34) then !RootMoist
    do t=1,di_array(iam)
        soilmr(t) = 0.0
        do m=1,nlevsoi
            soilmr(t) = soilmr(t)+clm(t)%rootfr(m)*clm(t)%h2osoi_liq(m)
        enddo
    enddo
    var_temp = soilmr
elseif(index==35) then !ACond
    var_temp = clm%acond
endif

call MPI_GATHERV(var_temp(1:di_array(iam)),di_array(iam), &

```

```
MPI_REAL,var,di_array,displs,MPI_REAL, &
0,MPI_COMM_WORLD, ierr)
```